

ABSTRACT

The present invention eliminates the disadvantages of an analysis target used by a cellular phone and speech recognition, that is, a normal sound which is transmitted through the air and which is externally sampled through a microphone, and improves the disadvantages that noise may be mixed or occur in the target, that information may leak, and that corrections are difficult. The present invention also provides a personal portable information terminal realizing new portable terminal communications which do not require training and which conform to the cultural practice of human beings.

In the present invention, no apparatus that obtains an analysis target is put off human body, and a normal sound is not an analysis target. A stethoscope-type microphone is installed on the surface of the human skin. Then, a vibration sound is sampled which is obtained when a non-audible murmur articulated in association with speech action (the motion of the mouth) not using the regular vibration of the vocal cords is transmitted through the flesh. A vibration sound obtained when a non-audible murmur amplified is transmitted through the flesh is similar to a whisper. The vibration sound can thus be heard and understood by human beings. Accordingly, the vibration sound can be used for a speech over the cellular phone as it is. Further, when the vibration sound obtained when the non-audible murmur is transmitted through the flesh is analyzed and converted into

parameters, a kind of soundless recognition is realized. The present invention replaces the HMM model, conventionally used for speech recognition by an acoustic model created on the basis of a vibration sound obtained when a non-audible murmur 5 is transmitted through the flesh. Therefore, the present invention provides a new method of inputting data to the personal portable information terminal.